

## **Maryland Commission on Climate Change Adaptation and Resiliency Working Group 2019 Work Plan**

### **PURPOSE**

The Maryland Commission on Climate Change (MCCC) is charged with advising the Governor and the General Assembly on ways to mitigate the causes of, prepare for, and adapt to the consequences of climate change and maintaining and strengthening the state's existing Greenhouse Gas Reduction Plan (GHG Plan). The Commission is supported by a Steering Committee and four working groups. The members of the working groups are appointed by the MCCC Chair and include representatives of academic institutions, renewable and traditional energy providers, environmental organizations, government agencies, labor organizations and business interests. The Adaptation and Resiliency Working Group (ARWG) is charged with developing and implementing a comprehensive strategy for reducing Maryland's climate change vulnerability, and providing state and local governments with tools to plan for and adapt to climate impacts such as extreme weather and sea level rise.

Even as the state moves forward with actions that will reduce greenhouse gases and ultimately result in increased energy efficiency, a more sustainable economy, and cleaner air; numerous climate impacts will still be felt into the future if we fail to adequately adapt. The climate is already changing and Maryland is already seeing an increase in extreme weather events, presenting new adaptation challenges in both the coastal and non-coastal zones.

### **ADAPTATION PROGRESS**

The Comprehensive Strategy for Reducing Maryland's Vulnerability to Climate Change<sup>1</sup> (henceforth referred to as the Adaptation Strategy) includes both short- and long-term measures that State and local governments may undertake in planning for and adapting to the diverse impacts of climate change. Ten years have passed since the MCCC drafted the Adaptation Strategy Phase I: Sea-level rise and coastal storms, and seven years since drafting Phase II: Building societal, economic, and ecological resilience. Within that decade, a tremendous amount of progress has been made, but there is still much work to undertake to ensure a resilient, prosperous future for Maryland's people, environment, and economy.

Throughout 2018, the ARWG undertook an assessment to analyze progress made on implementing the Adaptation Strategy. That progress review, along with conversations about agency- and issue-specific adaptation challenges, informed ARWG priorities for 2019. While the issues presented below are not an exhaustive list of all the climate change adaptation-related topics ARWG member agencies will work on this year, these have been identified as some of the most pressing issues with the most opportunity for progress to be made in 2019. Many items are exploratory, and therefore may become recommendations or work plan items for 2020 and beyond.

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<sup>1</sup> The Comprehensive Strategy for Reducing Maryland's Vulnerability to Climate Change includes both [Phase I: Sea-level rise and coastal storms](#) published July 2008 and [Phase II: Building societal, economic, and ecological resilience](#) published January 2011.



## NEW 2019 PRIORITIES FOR ARWG ACTION

1. *Building Capacity to Compete for Natural Infrastructure Resilience Funds*: The ARWG recognizes there is a need to prepare Maryland and its communities to take advantage of upcoming federal funding (e.g. FEMA, NOAA, USACE) and public private partnership (P3) opportunities that promote the use of natural infrastructure to build resilience to climate impacts. MDNR is already leveraging beneficial use of dredged material opportunities to reduce project costs and make applications more competitive, and this could serve as a model as these larger-scale funding opportunities emerge. MDNR will lead a group of ARWG partners throughout 2019 to discuss landscape-level needs for natural and nature-based (NNBF) project identification so that Maryland and its communities are better situated to compete for future funding. An update will be provided at the third quarter (Q3) ARWG meeting.
2. *Mapping Zones of Vulnerability*: In October 2018 the MCCC Scientific and Technical Work Group (STWG) updated Maryland's sea-level rise projections<sup>2</sup>. Separately but concurrently in 2018, the Maryland General Assembly passed a bill concerning Sea Level Rise Inundation and Coastal Flooding - Construction, Adaptation, and Mitigation<sup>3</sup>. Part V of this bill requires the Maryland Coast Smart Council to establish criteria to evaluate whether state funds may be used to mitigate hazards associated with sea level rise inundation and coastal flooding, and to incorporate tools to assess the vulnerability of an area or structure to those hazards. In 2019, the ARWG will advise the STWG and the Maryland Coast Smart Council as they work to produce a uniform set of maps or mapping tools that are practical for use by local governments, practitioners and the public. The ARWG will then work with ECO to disseminate and communicate the appropriate uses of these mapping products by the end of 2019. Progress updates will be provided at ARWG meetings as appropriate.
3. *Integrating Climate Change into the Phase III Watershed Implementation Plan*: Preliminary EPA estimates project that climate change will increase nitrogen, phosphorus, and sediment loads to the Chesapeake Bay. Between now and March 2021, the Chesapeake Bay Program (CBP) Partnership has committed to improve scientific understanding of these impacts, identify outstanding research needs, and refine nutrient and sediment load estimates for each Bay jurisdiction. Within the Maryland jurisdiction, the MCCC is the entity charged with implementing actions and strategies to mitigate and adapt to the likely consequences and impacts of climate change. Therefore, it makes sense for MCCC work groups to collaborate with the CBP Phase III Watershed Implementation Plan (WIP) teams throughout 2019 and beyond to determine how best to account for additional nutrient and sediment loads resulting from climate change. The Draft Phase III WIP will be published for public comment between April and June 2019. ARWG member agencies will review the Draft Phase III WIP for climate change considerations and provide constructive feedback to the CBP. MDE will lead efforts to coordinate and brief the ARWG as appropriate.
4. *Adaptive Retreat*: The State's adaptation strategies include both short- and long-term measures that state and local governments may undertake in planning for and adapting to diverse impacts of climate change. As landscapes change and shift, retreat or relocation is an emerging issue being discussed in

<sup>2</sup> Boesch, D.F., W.C. Boicourt, R.I. Cullather, T. Ezer, G.E. Galloway, Jr., Z.P. Johnson, K.H. Kilbourne, M.L. Kirwan, R.E. Kopp, S. Land, M. Li, W. Nardin, C.K. Sommerfield, W.V. Sweet. 2018. [Sea-level Rise: Projections for Maryland 2018](#), 27 pp. University of Maryland Center for Environmental Science, Cambridge, MD.

<sup>3</sup> [House Bill 1350](#) / [Senate Bill 1006](#)



many jurisdictions across the country. In 2019, ARWG will provide a forum for discussing retreat as an adaptation strategy. During the first quarter meeting the ARWG heard from Georgetown Climate Center about the toolkit they are developing to frame the legal and policy considerations of managed retreat. Throughout 2019, MDNR will convene a group of ARWG members to explore the concept of retreat as it is currently being used in other jurisdictions and gather key methods, tools, case studies, financial rationales, etc. that would be useful to Maryland. In this exploration phase, the group will also identify measures to ensure that all communities and landowners, regardless of income level, are given the same opportunities and choices. An update will be provided at the third quarter (Q3) ARWG meeting.

5. *Tracking Progress:* In 2018 the ARWG undertook a review its Phase I and II Comprehensive Strategy for Reducing Maryland's Vulnerability to Climate Change recommendations to identify progress and highlight gaps and needs. The MCCC 2018 Annual Report called on the ARWG to develop metrics for tracking adaptation progress, and while this review was a start, more could be done to standardize metrics. In 2019, MDNR will convene a group of ARWG members to discuss possible metrics for tracking progress. In support of this work, MDP will continue to track progress on the integration of coastal resilience components in comprehensive plans and, with guidance from MEMA, hazard mitigation plans, and MDH will continue to track climate adaptation projects happening across the state via the Maryland Environmental Public Health Climate Adaptation Tracker online mapping portal. The ARWG will also consider the merit of developing a Phase III Strategy based on where progress can continue to be made. An update will be provided at the second quarter (Q2) ARWG meeting.


## ONGOING WORK FOR 2019 STATUS UPDATES

6. *Environmental Justice:* Environmental justice will be considered in all of the work the ARWG undertakes. In 2019 and beyond, the ARWG will continue elevating this topic within the MCCC Steering Committee, and working with other MCCC working groups and the Maryland Commission on Environmental Justice and Sustainable Communities (CEJSC) to ensure underserved communities are given the assistance needed to prepare for and adapt to the impacts of climate change.
7. *Healthy Soils Initiative:* House Bill 1063, passed during the 2017 legislative session, established a Healthy Soils Program and requires MDA to provide incentives, including research, education, technical assistance, and subject to available funding, financial assistance to farmers to implement the management practices that promote soil health and sequester carbon. MDA, MDNR, and MDE should work together through the ARWG and Mitigation Work Group, as well as the Healthy Soils Consortium, to identify long-term sources of funding to support the purposes of the Healthy Soils Act.
8. *Nuisance Flood Plans:* The Maryland General Assembly passed House Bill 1350 / Senate Bill 1006 in July 2018, which charges local jurisdictions to develop plans to adapt to nuisance flooding on or before July 1, 2019. To help jurisdictions comply with this legislative change, ARWG partners are developing a guidance document that will be released in early 2019 that outlines ways communities could address nuisance flooding. An update will be provided at the third quarter (Q3) ARWG meeting.



9. *Saltwater Intrusion*: The Maryland General Assembly passed House Bill 1350 / Senate Bill 1006 in July 2018, which directs the Maryland Department of Planning to establish a plan to adapt to saltwater intrusion by December 15, 2019. MDP initiated a work group of state agency and subject matter experts in 2018. Work will continue in 2019, and a draft plan will be reviewed by the ARWG in advance of submission by the 2019 deadline.
10. *Climate Leadership Academy*: ARWG partners will continue to foster a community of climate-smart local government and infrastructure leaders through the participation in and promotion of the Maryland Climate Leadership Academy. Cohorts A, B and C will complete the Certified Climate Change Professional (CC-P) Credential Training Program in 2019, and additional Cohorts may be added in 2019. Led by MDNR, work will also commence to identify Maryland case studies and to develop a Local Government Certificate or “short course” as part of the Maryland Climate Leadership Academy.
11. *Human Health Implications of Climate Change*: ARWG partners will continue to provide tools, resources, and technical assistance for citizens, communities, non-governmental organizations, schools, local governments, planners, and state agencies to help them think about health and use health data as they develop climate change plans. ARWG partners will also continue to ensure public health considerations are integrated in community forums that address climate adaptation efforts. ARWG members commit to tracking these efforts via the Maryland Environmental Public Health Climate Adaptation Tracker online mapping portal.
12. *Building Financial Resilience*: With climate change threatening Maryland communities, infrastructure, economy, and culture, Maryland needs a long-term strategy for building financial resilience. Throughout 2019, ARWG partners will discuss multiple ways the state could build financial resilience. For example, DGS is currently at an exploratory stage on developing Capital Improvement Plans and Operation & Maintenance Strategies for State buildings using Asset Management as a decision-making tool. This initiative could be extended to include the development of Climate Change Response Plans utilizing the same tool. The Response Plans could create a framework for evaluating climate change impacts on level of service, risks and costs; optimizing climate change response projects; and identifying the best long-term funding strategies. This initiative combined with initiatives from other ARWG partners could build financial resilience for State's buildings and infrastructure.
13. *Addressing Increased Precipitation at the Local Level*: Maryland's average annual precipitation is projected to increase 10% from the current average by 2100. The frequency of extreme precipitation events is also anticipated to increase, which our existing gray infrastructure (e.g. stormwater systems) and green infrastructure investments (e.g. water quality BMPs) may not be able to effectively manage. Computer models, like those used by the Chesapeake Bay Program Partnership, are starting to be used to predict possible changes to precipitation regimes resulting from climate change. In 2019, MDE, DNR, and others will partner to assess the state of the science on projecting climate change impacts on precipitation, with a focus on design storms, which could help Maryland communities better assess their localized flood risks and plan to become more resilient to precipitation-induced flooding.
14. *Dam Safety*: As precipitation increases it is vital to ensure Maryland dams are resilient to the effects of climate change. In 2019 MDE will lead work to: prioritize inspections of significant and high hazard





dams, assess their condition, and require repair or removal of dams where necessary to protect life and property. MDE, in consultation with MEMA and other ARWG partners, will also ensure adequate emergency preparedness by requiring owners to complete routine updates of dam Emergency Action Plans and by providing technical assistance to dam owners to implement table-top exercises for these Emergency Action Plans. MDE will develop intra-agency standard operating procedures for emergency response to individual and multiple dam failure incidents.

15. *Climate Change Management Opportunities through Environmental Compliance:* In 2019, ARWG will provide a forum for discussing ways to support climate resilience through MDE's environmental Compliance Program. The ARWG will be briefed on how opportunities can arise in the context of compliance assurance (inspection and enforcement). For example, should MDE prioritize inspections and enforcement differently if climate change is a factor? During this forum the ARWG will provide their thoughts to MDE's Compliance Program staff and identify fruitful avenues for follow-up. An update will be provided at the third or fourth quarter (Q3 or Q4) ARWG meeting.



**Appendix A**  
**ARWG Membership Roster -- Updated 4/1/19**

**ARWG Chair:** Secretary Jeannie Haddaway-Riccio, Department of Natural Resources

**ARWG Coordinators:** Catherine McCall and Kimberly Grubert, Department of Natural Resources

**Maryland Commission on Climate Change Liaison:** C. Richard D'Amato, Retired Attorney

**House Delegate Member:** Dana Stein, Maryland General Assembly

**Public Sector Representatives**

Fredrika Moser, Maryland Sea Grant

Brian Ambrette, Eastern Shore Land Conservancy

Eric Myers, The Conservation Fund

**State-Agency Adaptation Sector Leads**

Matthew Rowe, Department of Environment on Water Resources

Don Van Hassent, Department of Natural Resources on Forest and Terrestrial

Kyle Overly, Maryland Emergency Management Agency on Emergency Management

Bruce Michael, Department of Natural Resources on Bay and Aquatic

Clifford Mitchell, Department of Health and Mental Hygiene on Health

Jason Dubow, Department of Planning on Growth and Infrastructure

Susan Payne, Department of Agriculture on Agriculture

Sandy Hertz, Department of Transportation on Transportation Growth and Infrastructure

Catherine McCall, Department of Natural Resources on Coastal Hazards

**Technical Advisors**

Katherine Charbonneau, Critical Area Commission

Susan Gore, Department of Budget and Management

Scott Zacharko, Department of the Environment

Kevin Wagner, Department of the Environment

Nell Ziehl, Department of Planning - Maryland Historical Trust

Spyridon Papadimas, Department of General Services

Lisa Lowe, Department of Information Technology

Sasha Land, Department of Natural Resources

Megan Granato, Department of Natural Resources

Matthew Fleming, Department of Natural Resources

Elizabeth Habic, Department of Transportation - State Highway Administration

Shawn Kiernan, Department of Transportation - Maryland Port Administration

*Vacant*, Local Government Representative

JaLeesa Tate, Maryland Emergency Management Agency

Andrew Asgarali-Hoffman, Maryland Emergency Management Agency

Joy Hatchette, Maryland Insurance Administration



## ARWG & Partners Meeting Schedule for 2019

Date/Time	Location	Agenda Topics
February 25 2 to 4 pm	DNR (Tawes)	Adaptation & Response Work Group Q1 Meeting - Finalize 2019 Work Plan - Managed Retreat Toolkit - Operationalizing Climate in Local Planning
April 18	MDE	Maryland Commission on Climate Change Meeting
May 20 2 to 4 pm	DNR (Tawes)	Adaptation & Response Work Group Q2 Meeting - 2019 Work Plan status updates - Review of progress on Phase I & II Adaptation Strategies - Discussion of Metrics to Track Progress
May 30 (tentative)	MDE	Maryland Commission on Climate Change Meeting
June 20	MDE	Maryland Commission on Climate Change Meeting
June 23-26	Ocean City	Maryland Municipal League Summer Conference
Summer TBD	DNR (Tawes)	Ad Hoc Meeting on Metrics to Track Progress (tentative)
July 11 (tentative)	MDE	Maryland Commission on Climate Change Meeting
August 5 10 am to 12 pm	DNR (Tawes)	Adaptation & Response Work Group Q3 Meeting - HB 1350 / SB 1006 progress updates - 2019 Work Plan status updates - Generate 2019 Annual Report Recommendations
August 8 (tentative)	MDE	Maryland Commission on Climate Change Meeting
August 14-17	Ocean City	Maryland Association of Counties Summer Conference
September 19	MDE	Maryland Commission on Climate Change Meeting
October 16	MDE	Maryland Commission on Climate Change Meeting
November 6	MDE	Maryland Commission on Climate Change Meeting
November 18 2 to 4 pm	DNR (Tawes)	Adaptation & Response Work Group Q4 Meeting - Finalize 2019 Annual Report Recommendations - 2019 Work Plan status updates - Scope 2020 Work Plan

*Schedule reflects major ARWG and MCCC meetings and actions.*

*It does not reflect subgroup conversations or milestones that may be established to address work plan issues.*